

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawaii 96813

July 8, 2010

Board of Land
and Natural Resources
Honolulu, Hawaii

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National
Monument Education Permit to Dr. Andrew Rossiter, Waikiki Aquarium, for Access to State
Waters to Conduct Coral and Fish Collection Activities

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument education permit to Dr. Andrew Rossiter, Director, Waikiki Aquarium, pursuant to § 187A-6, Hawaii Revised Statutes (HRS), chapter 13-60.5, Hawaii Administrative Rules (HAR), and all other applicable laws and regulations.

The education permit, as described below, would allow entry and activities to occur in the Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Nihoa Island
- Necker Island (Mokumanamana)
- French Frigate Shoals
- Gardner Pinnacles
- Maro Reef
- Laysan Island
- Lisianski Island, Neva Shoal
- Pearl and Hermes Atoll
- Kure Atoll State Seabird Sanctuary

The activities covered under this permit would occur between June 1, 2010 and December 31, 2010.

The proposed activities are largely a renewal of work previously permitted and conducted in the Monument.

INTENDED ACTIVITIES

The purpose of these activities is the collection and removal of live coral and fish from Papahānaumokuākea Marine National Monument, to be maintained and put on public display in a new exhibit at the Waikiki Aquarium highlighting the fauna and ecosystem of the

Northwestern Hawaiian Islands. In addition, some specimens may be housed in an educational display at the NOAA Mokupapapa Discovery Center in Hilo.

Target species are those which are rare or absent from the Main Hawaiian Islands, and include:

Table Coral	Masked Angelfish
Fuzzy Table Coral	Japanese Angelfish
Finger Staghorn Coral	Bandit Angelfish
Bushy Staghorn Coral	Hawaiian Morwong
Branching Staghorn Coral	Sling Jaw Wrasse
Lumpy Rice Coral	Thompson's Anthias
Hawaiian Rice Coral	Elegant Anthias
	Bearded Armorhead

For coral, the applicant proposes to collect 10 specimens of each species, except for Table Coral for which 15 specimens are requested. In addition, the applicant requests to collect up to 5 voucher specimens of any unknown coral species encountered. The priority would be to collect small (5-15cm) naturally dislodged coral fragments of these corals, with fragments of intact colonies being used only as a last resort. Only corals exhibiting excellent health characteristics would be collected.

For fish, the applicant proposes to collect 4-10 specimens of each species, except for Thompson's Anthias for which 20 specimens are requested. Collection would be via hand-nets, barrier nets, small hand-lines, fish keeps, and/or various collection containers and bags. The priority would be to collect fish from less than 50ft of depth to minimize the chance of barotraumas.

Extreme care would be taken to follow the protocols established by the applicant and Monument staff concerning the collection, packing, transport and maintenance of live coral and fish (see F-5c). Coral and fish collections would either be conducted by Waikiki Aquarium staff or opportunistically by divers already accessing the Monument under other permits, such as Randy Kosaki from NOAA, and Jim Maragos from the US Fish and Wildlife Service.

The proposed activities are a continuation of previously permitted and conducted work. As with many projects in the Monument, multiple trips may be necessary to complete collections. The new aspect of this year's application is the request to collect live fish from State waters. Last year fish were only to be collected at Midway.

Because the Northwestern Hawaiian Islands are not easily accessible to the public, the Waikiki Aquarium's new 5,000 gallon display would help introduce the Monument to the public and stimulate an interest and appreciation for its significance and importance.

The activities proposed by the applicant directly support the Monument Management Plan's action plan 3.5.4 – Ocean Ecosystems Literacy (through strategy OEL-2: Develop and implement new tools to “bring the place to the people”, with focus on students, within 3 years).

The activities described above may require the following regulated activities to occur in State waters:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving monument resource
- ☒ Touching coral, living or dead
- ☒ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since March 15th, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Comments received from the scientific community are summarized as follows:

Scientific reviews support the acceptance of this application.

Concerns raised were:

1. Why certain species are being targeted for collection inside the Monument, when they are also present outside of Monument waters (MHI or elsewhere)
2. Clarification that there are adequate safeguards at the Aquarium to ensure that any fish or coral health issues do not get released into the waters around Oahu (i.e. flow through tanks that outlet in nearshore waters)
3. The timeline for the exhibits that would display collected fish/corals

Comments received from the Native Hawaiian community are summarized as follows:

Cultural reviews support the acceptance of this application. No concerns were raised.

Comments received from the public are summarized as follows:

No comments were received from the public on this application.

Additional reviews and permit history:

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g. MMPA, ESA, EA) Yes ☒ No ☐

If so, please list or explain:

- The proposed activities are in compliance with the National Environmental Policy Act.

- The Department has made an exemption determination for this permit in accordance with chapter 343 HRS, and Chapter 11-200, HAR. See Attachment ("DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT EDUCATION PERMIT TO ANDREW ROSSITER, WAIKIKI AQUARIUM, FOR ACCESS TO STATE WATERS TO CONDUCT CORAL AND FISH COLLECTION ACTIVITIES UNDER PERMIT PMNM-2010-023").

Has Applicant been granted a permit from the State in the past? Yes ☒ No ☐

If so, please summarize past permits:

- The applicant was granted permit PMNM-2009-031 to conduct similar work in 2009.

Have there been any a) violations: Yes ☐ No ☒
b) Late/incomplete post-activity reports: Yes ☐ No ☒

Are there any other relevant concerns from previous permits? Yes ☐ No ☒

RESPONSE:

- The applicant points out that these signature species are highly abundant around the NWHI, but are extremely rare or beyond the depths at which commercial divers/WAQ staff can collect around the MHI. As such, removal of a few specimens of these species from the Main Hawaiian Islands may mean extirpation from that habitat. In contrast, the collection of a limited number of specimens of these target species from the NWHI where they are abundant, would be insignificant.
- The applicant states that the WAQ takes extreme care to make sure all non-native organisms do not find their way into local waters. The WAQ maintains many exhibits with non-native animals or animals from surrounding islands which are uncommon to this area, and all of the discharge water from these exhibits and holding tanks must be discharged to the sewer system. The WAQ also has a disaster preparedness protocol which outlines procedures that must be followed in the event of a known natural disaster to prevent the spread of any of these organisms/or potential health issues to surrounding waters.
- The applicant points out that the NOAA Mokupapapa Discovery Center is currently up and running. Work began on the Aquarium's NWHI exhibit in May, with a grand opening anticipated by March 2011. The animals collected during these trip(s) would be housed in an exhibit quality tank behind the scenes until the new exhibit has properly cycled and is ready to accept fish.

STAFF OPINION:

DAR staff is of the opinion that Applicant has properly demonstrated valid justifications for his application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with the following special instructions and conditions,

which are in addition to the Papahānaumokuākea Marine National Monument Education Permit General Conditions. All suggested special conditions have been vetted through the legal counsel of the Co-Trustee agencies (see Recommendation section).

MONUMENT MANAGEMENT BOARD OPINION:


The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by DAR staff.

RECOMMENDATION:


That the Board authorize and approve an Education Permit to Dr. Andrew Rossiter, Waikiki Aquarium, with the following special conditions:

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge

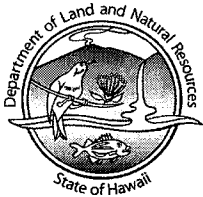
Respectfully submitted,


for Administrator

APPROVED FOR SUBMITTAL


LAURA H. THIELEN
Chairperson

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

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LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

RUSSELL TSUJI
DEPUTY DIRECTOR - LAND

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAIHŌOLAWĒ ISLAND RESERVE COMMISSION
LAND
STATE PARKS

TO: Division of Aquatic Resources File

THROUGH: Laura H. Thielen, Chairperson

FROM: Francis Oishi
Division of Aquatic Resources

A handwritten signature in dark ink, appearing to be "FO", is written over the name "Francis Oishi".

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200, HAR, FOR A PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT EDUCATION PERMIT TO DR. ANDREW ROSSITER, WAIKĪKĪ AQUARIUM, UNIVERSITY OF HAWAII, FOR ACCESS TO STATE WATERS TO CONDUCT CORAL AND FISH COLLECTION ACTIVITIES UNDER PERMIT PMNM-2010-023.

The following permitted activities are found to be exempted from preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title:

Papahānaumokuākea Marine National Monument Education Permit to Dr. Andrew Rossiter, Waikīkī Aquarium, University of Hawai'i, for Access to State Waters to Conduct Coral and Fish Collection Activities

Permit Number: PMNM-2010-023

Project Description:

The education permit application, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument (Monument), including the NWHI State waters between July 1, 2010 and December 31, 2010.

This is an effort to collect live coral and fish from Papahānaumokuākea Marine National Monument, to be maintained and put on public display in a new exhibit at the Waikīkī Aquarium highlighting the fauna and ecosystem of the Northwestern Hawaiian Islands.

The Waikīkī Aquarium has been in existence since 1904, when it began exhibiting Hawaiian reef life, and is the third oldest aquarium in the United States. In 1912, the aquarium began its affiliation with the University of Hawai'i. In addition to its education mission, the Waikīkī Aquarium conducts research into aquarium propagation of Hawaiian aquatic life, and has won national awards for its propagation programs and exhibits.

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The proposed activities are in direct support of the Monument Management Plan's Ocean Ecosystems Literacy action plan (3.5.2) and Constituency Building and Outreach action plan (3.5.4). These action plans include efforts to develop and implement new tools to "bring the place to the people" and to increase public understanding of the Monument.

Activities to support public outreach and education of the NWHI are addressed in the Monument Management Plan Environmental Assessment (December 2008) which resulted in a FONSI. This EA summarizes that activities to support outreach would have a beneficial effect on all natural resources in the Monument (PMNM MMP Vol. 2, p. 187).

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since March 15th, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Exemption Determination:

After reviewing HAR § 11-200-8, including the criteria used to determine significance under HAR § 11-200-12, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit, including live coral and fish collections, have been evaluated as a single action. As a preliminary matter, multiple or phased actions, such as when a group of actions are part of a larger undertaking, or when an individual project is precedent to or represents a commitment to a larger project, must be grouped together and evaluated as a single action. HAR § 11-200-7. This permit does not involve an activity that is precedent to a later planned activity.

2. The Exemption Class for Scientific Research with no Serious or Major Disturbance to an Environmental Resource Appears to Apply. Chapter 343, HRS, and § 11-200-8, HAR, provide for a list of classes of actions exempt from environmental assessment requirements. HAR §11-200-8.A.5. exempts the class of actions which involve "basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource."

The proposed collection activities here appear to fall squarely under the exemption class #5, exempt item #5 as described under the former Fish and Game Division exemption list published on January 19, 1976. Exemption item #5 has been interpreted to include "...collection, culture and captive propagation of aquatic biota,..." and also "... occasional fish collection for study and observation, ... collection for propagation, and aquaculture or demonstration studies (existing programs) such as those being proposed.

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As discussed below, no significant disturbance to any environmental resource is anticipated in the sampling of Monument resources. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if “the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.” HAR § 11-200-8.B. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. HAR § 11-200-12. Examples of actions which commonly have a significant effect on the environment are listed under HAR § 11-200-12.

No prior projects of this type have been undertaken to date. The activities would be a continuation and expansion of work previously conducted by the applicant. The applicant has exhibited a few fish species from the NWHI in the 1980s with great success. As part of the “bring the place to the people” concept, the Aquarium is creating a special NWHI exhibit to highlight the unique and special species from this area. While other permits allow for the collection of several of the same species, the numbers requested are extremely limited. Up to 10 specimens of 7 coral species, and up to 20 specimens of 8 fish species would be collected. Collections would be non-lethal and non-destructive. With this in mind, significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the potentially sensitive environment of the project area will not be significantly affected. All activities will be conducted in a manner compatible with the management direction of the Monument Proclamation in that the activities do not diminish monument resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects. The joint permit review process did not reveal any anticipated indirect or cumulative impacts, nor did it raise any cultural concerns, that would occur as a result of these activities.

The activities would be conducted from the NOAA Ship HI‘IALAKAI during its July/August cruise. It is anticipated that the vessel will visit Nihoa, French Frigate Shoals, Pearl and Hermes, Midway, and Kure on this expedition. The following table shows all permitted activities that may occur concurrently.

Table 1. Concurrent Projects Aboard NOAA SHIP HI‘IALAKAI

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Permit	Purpose and Scope	Location
PMNM-2010-007 NOAA Ship HI'IALAKAI	The permit allows NOAA Ship HI'IALAKAI entry into PMNM. Personnel aboard the vessel will be permitted under separate permits.	All locations
PMNM-2010-016 Gleason	The permit allows maritime heritage surveys and artifact recovery.	All locations
PMNM-2010-023 Rossiter (proposed)	The proposed action is to allow collection of live coral and fish.	All locations
PMNM-2010-024 Gates	The permit allows coral collections.	FFS, PH
PMNM-2010-025 Karl	The permit allows coral collections and recovery of data loggers.	FFS, PH
PMNM-2010-031 Kosaki	The permit allows survey of deep coral reefs; collection of voucher fish, coral, and algae; removal of target invasive species.	All locations
PMNM-2010-037 Toonen	The permit allows collection of common reef invertebrates.	All locations (specific locations per species)
PMNM-2010-038 Bowen	The permit allows collection of reef fishes.	All locations
PMNM-2010-039 Winn	The permit allows water sampling.	All locations

Eight other permits would potentially be active in the Monument concurrently with the proposed activities. Most of those would be dealing with different organisms or habitat types and would not overlap. Of the three other permits that would be collecting shallow water corals, none requested the same species. Likewise, the one other permit that would be collecting shallow water fish has not requested any of the same species. The culmination of these permits, and their disparate activities, occurring throughout the Monument over a 5-week period, is not anticipated to have significant cumulative impacts.

Since no significant cumulative impacts or significant impacts with respect to any particularly sensitive aspect of the project area are anticipated, the categorical exemptions identified above should remain applicable.

4. Overall Impacts will Probably be Minimal and Insignificant Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific

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conditions attached to the permit. Specifically, all education activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200, HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.

Laura H. Thielen
Board of Land and Natural Resources

Date

Papahānaumokuākea Marine National Monument
EDUCATION Permit Application

NOTE: *This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).*

ADDITIONAL IMPORTANT INFORMATION:

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.
- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.
- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

Send Permit Applications to:

Papahānaumokuākea Marine National Monument Permit Coordinator

6600 Kalaniana'ole Hwy. # 300

Honolulu, HI 96825

nwhipermit@noaa.gov

PHONE: (808) 397-2660 FAX: (808) 397-2662

SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.

Papahānaumokuākea Marine National Monument Permit Application Cover Sheet

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

Summary Information

Applicant Name: Dr. Andrew Rossiter: Director, Waikiki Aquarium

Affiliation: Waikiki Aquarium, and Department of Zoology, University of Hawaii at Manoa

Permit Category: Education

Proposed Activity Dates: June 1, 2010 - December 31, 2010

Proposed Method of Entry (Vessel/Plane): Vessel and Plane

Proposed Locations: Nihoa Island, Mokumanamana, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Neva Shoal, Pearl and Hermes Atoll, Midway Atoll, and Kure Atoll

Estimated number of individuals (including Applicant) to be covered under this permit:

(10) ten, but most likely no more than (8) eight on any one trip

Estimated number of days in the Monument:

Estimated maximum of (3) three separate trips covering approximately (30) thirty days each, for a total of 90 days

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...
involve the collection and removal of a limited number of target live fishes and corals from the Papahānaumokuākea Marine National Monument. These specimens will be collected with extreme care by trained and highly experienced professional biologists. Accidental by-catch and incidental mortalities will be avoided by targeting select specimens, and extreme care will be taken to not damage the habitat. It is the goal of the Waikiki Aquarium staff or other designees to collect specimens and return them alive and in good condition to the Waikiki Aquarium, where they will be maintained and put on public display in a new exhibit highlighting the fauna and ecosystem of the Papahānaumokuākea Marine National Monument.

b.) To accomplish this activity we would
use SCUBA and snorkeling techniques within the Papahānaumokuākea Marine National Monument, specifically around the islands of Midway Atoll, French Frigate Shoals, Maro Reef,

and Pearl and Hermes Atoll, but also including other islands/reefs within the Monument. A small boat or vessel may be used to reach those few collecting sites where shore access is not possible.

The target organisms will be collected by trained and experienced biologists using non-destructive and non-lethal collecting methods, namely handnets, barrier nets, geological picks, small hand tools, fishkeeps and other small collection containers. Specimens will be targeted individually to avoid the accidental capture or incidental mortality of unwanted specimens that can occur during non-targeted netting activities.

For fishes, to minimize post capture trauma, emphasis will be placed on collecting smaller, juvenile specimens so as to avoid the stress-related issues that sometimes occur with larger specimens during transportation and introduction to captivity. Additionally, this protocol aims to, whenever possible, avoid the removal of larger, reproductively mature animals from the population.

For corals, priority will be given to collecting fragments which have become detached naturally from parent colonies. Fragmentation of intact colonies will be undertaken as a last resort only when naturally occurring fragments are not plentiful or available, and will be done with utmost care so as to minimize impact to the parent colony. Waikiki Aquarium biologists and their designees are highly experienced and extremely competent in this procedure and any deleterious effects from sampling will be minimal and short lived. For example, in the 2009 sampling for this project, the small scars left when fragments were removed from a parent colony had completely healed over three weeks later.

c.) This activity would help the Monument by ...
presenting to our 320,000 visitors annually, a living reef habitat representative of that found in the Monument. Viewing this ecologically accurate exhibit and associated graphic and video educational messaging will result in increased public awareness of the Monument. Furthermore, it will also give rise to an improved understanding of the unique nature of the marine faunas found there, and why it is so important to preserve and protect them. Additionally, our education programs, which reach over 32,000 schoolchildren annually, will be revised to incorporate accurate scientific and cultural information about the Monument, using the exhibit as a dynamic living tool to underline the education and conservation message.

Other information or background:

The Waikiki Aquarium has a long and successful history in maintaining, breeding, and propagating both local and non-local species of marine fishes and invertebrates. This includes uncommon and previously described "hard to keep" species, endangered species, and Species of Concern. The Aquarium is internationally renowned for its pioneering and successful programs in this area and holds many records for 'firsts' in public exhibiting or breeding of species, any many records for longevity in captivity. For example, it was the first aquarium within the United States, and second worldwide, to successfully breed the Chambered Nautilus, and continues to breed these animals to this day. One of the signature fish species which we have applied to

collect under this permit, the Masked Angelfish *Genicanthus personatus*, has only been bred in captivity at the Waikiki Aquarium. The Aquarium's Coral Ark program seeks to maintain at the Aquarium rare corals from around the Main Hawaiian Islands, as a precautionary measure should these corals disappear from their natural environment. Currently, rare species such as the irregular rice coral *Montipora dilatata*, one of four federally recognised Species of Concern in Hawaii (Kaneohe Bay, Oahu) and *Acropora cytherea* (Kauai) are currently being successfully grown and propagated as part of this program. Our last trip to French Frigate Shoals last season even resulted in the collection and current successful maintenance of one undescribed *Acropora* species according to personal communications with USFWS Coral Reef Biologist, Dr. James Maragos. Many other examples of the Aquarium's achievements exist, and the Aquarium continues to be at the forefront in maintaining successfully, exhibiting or breeding newly discovered, rare, and challenging species.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Rossiter-Ph.D, Andrew

Title: Director, Waikiki Aquarium

1a. Intended field Principal Investigator (See instructions for more information):

Richard L. Klobuchar, Jr.

University of Hawaii (Manoa)/Waikiki Aquarium

Aquarium Biologist/Research Support/Scientific Diver

2. Mailing address (street/P.O. box, city, state, country, zip):

[REDACTED]

Phone:

[REDACTED]

Fax:

[REDACTED]

Email:

[REDACTED]

For students, major professor's name, telephone and email address:

3. Affiliation (institution/agency/organization directly related to the proposed project):

University of Hawaii (Manoa)/Waikiki Aquarium

Bishop Museum

USFWS

NOAA

4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Teacher; Jane Doe, Videographer):

Norton Chan-Aquarium Biologist II/Scientific Diver, UH Manoa, Waikiki Aquarium;
Additional Waikiki Aquarium Biologist(s)/Scientific Diver(s) (TBD); James Maragos,
Ph.D.-Coral Reef Biologist, USFWS; Richard Pyle, Ph.D.-Research Technician,
Associate Zoologist, Database Coordinator, Bishop Museum; Additional NOAA team
member(s) (TBD); Additional Collection Divers (TBD)

Section B: Project Information

5a. Project location(s):

<input checked="" type="checkbox"/> Nihoa Island	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Necker Island (Mokumanamana)	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> French Frigate Shoals	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Gardner Pinnacles	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Maro Reef			
<input checked="" type="checkbox"/> Laysan Island	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Lisianski Island, Neva Shoal	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Pearl and Hermes Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Midway Atoll	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Kure Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Other			

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

Location Description:

Waikiki Aquarium, Bishop Museum, USFWS, and NOAA staff and their designees will conduct SCUBA/snorkeling activities in various marine habitats from intertidal to <50 meters depth around the various project locations. Collaborative collecting efforts with additional Bishop Museum, FWS, and NOAA staff may be necessary around the islands of the Monument to obtain certain specimens which were not found by Waikiki Aquarium staff.

5b. Check all applicable regulated activities proposed to be conducted in the Monument:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- ☐ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- ☒ Anchoring a vessel
- ☐ Deserting a vessel aground, at anchor, or adrift
- ☒ Discharging or depositing any material or matter into the Monument
- ☒ Touching coral, living or dead
- ☐ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- ☒ Attracting any living Monument resource

- ☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- ☐ Subsistence fishing (State waters only)
- ☒ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

6 Purpose/Need/Scope *State purpose of proposed activities:*

The Papahānaumokuākea Marine National Monument is the largest single area dedicated to conservation in the United States and is home to more than 7,000 marine species, a quarter of which are found nowhere else on Earth. The region holds the largest, healthiest, and most pristine coral reef system in the United States.

Its geographic remoteness and restrictions on public access mean that most people in their lifetime will not be able to visit the Papahānaumokuākea National Monument, and so will be unable to gain an appreciation for our country's largest Marine National Monument. Through its new 5,000 gallon public display, the Waikiki Aquarium seeks to introduce the Monument to the public and stimulate an interest and appreciation for its significance and importance. Additionally, graphic and video formats will provide educational and conservational messaging dedicated to the Monument ecosystem.

To create an exhibit that represents the Monument accurately and distinguishes it clearly from existing Aquarium exhibits that represent other Hawaiian ecosystems, certain signature species of fishes and invertebrates will need to be collected and transported back to the Waikiki Aquarium for public display and propagation. These signature species are highly abundant around the NWHI, but are extremely rare or totally absent around the Main Hawaiian Islands. As such, removal of a few specimens of these species from the Main Hawaiian Islands may mean extirpation from that habitat. In contrast, the collection of a limited number of specimens of these target species from the NWHI where they are abundant would be insignificant. It is on this reasoning that our request to collect from the NWHI is based.

7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?

This activity will be conducted in a manner that does not impinge upon the cultural, natural and historical resources and ecological integrity of the Monument. Ultimately, this project will result in an increased attention and appreciation toward the cultural and natural resources and ecological integrity of the Monument. The living organisms collected during this activity will be displayed at the Waikiki Aquarium in the largest NWHI exhibit in the world. In addition to experiencing a living visual underwater image of the Monument through this exhibit, guests will be presented with educational graphics and video presentations that discuss the resources and importance of the Monument.

The activities of the Aquarium are centered around education, conservation and research, and it is our goal to promote the cultural and natural resources and ecological aspects of the NWHI, and not detract from them. Of particular relevance in regard is our sampling time frame and ecologically sensitive protocols. Sampling will last no longer than is necessary to collect the desired species. Non-lethal and non-destructive capture methods will be used to ensure that only the targeted organisms are collected, and that these are treated with the greatest care possible. Care will be taken to ensure that the environment they are removed from is not harmed in the process. Shore-based dives and snorkeling will be used preferentially whenever possible, to prevent any additional disturbance that may be caused by a small boat/vessel and to reduce the amount of additional resources that would be used. Only specimens which are easily replaced or can regrow in a minimal amount of time will be collected. Wherever possible, juvenile fishes will be collected, thereby avoiding the removal of larger, sexually mature specimens which help repopulate the reefs. Collected coral fragments will preferentially consist of naturally detached fragments; only if these are unavailable will small fragments be removed directly from parent colonies. Should fragment removal be necessary, it will be done in a manner that will not affect the long-term growth or wellbeing of the coral: Waikiki Aquarium biologists are highly experienced and very successful in this technique. If coral fragments are taken directly from parent colonies,

to minimize collection pressure on any single colony, several different colonies will be sampled. No activities will be performed in the vicinity of known shipwrecks or other cultural resources. If and such resources are discovered during the course of our activities, their location(s) will be noted and reported back to the Monument. Collection activities will cease immediately, and will be moved to another location.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects?

Only the minimum number of target organisms (i.e. fishes and corals) necessary to achieve our goals will be removed, and no other organisms will be damaged or collected. Together with the careful, precise and ecologically-sensitive collection methods used by the experienced biologists involved, these actions will ensure that any short term impact of removal will be minimal, and that long term impact will be undetectable. For example, in the 2009 sampling for this project, the small scars left when fragments were removed from a parent colony had completely healed over three weeks later. The protocols used in this project should ensure that there are no short term or long term effects on the cultural historic resources of the Monument, which will remain intact and essentially unchanged.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.

As noted in the Proclamation, the Monument is home to thousands of species, many of which are found nowhere else on Earth. Every effort will be made to collect the majority of the specimens needed from the local waters of the Main Hawaiian Islands, but it simply is not possible to collect all the specimens we will need around these islands. In addition to this, the stress placed on fish populations and ecosystems of the NWHI, where these fish are relatively common, would be insignificant or undetectable. This is in stark contrast to the high stress that collection would place on fish populations in the Main Hawaiian Islands, where these animals are relatively rare and whose continued survival there is uncertain. As such, the probability of a rapid and successful population

replenishment following removal of a small number of specimens is almost assured in the waters of the Monument, but highly uncertain in the waters of the Main Hawaiian Islands.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

The minimal and brief effect this activity might have pales in comparison to the benefits it brings to the Monument. The Waikiki Aquarium is world renowned for its ability to recreate ecologically accurate and realistic exhibits of marine habitats. For visitors, being able to actually "see" a part of the Monument through the NWHI exhibit would do much more to interest and educate them than any book or video. Having live animals that most people will never get to see in their lifetimes in their natural environment, separated from them by only a thin sheet of acrylic, is guaranteed to grab the viewer's attention and stimulate their interest. By viewing the exhibit and the associated graphic and video education presentations, the public will develop an appreciation of the importance of the Papahānaumokuākea Marine National Monument and the need to preserve it for future generations. Lastly, interactive touchscreens associated with the exhibit will enhance this appreciation by providing information on the cultural importance of the islands, their natural resources and their ecology, and provide visitors an insight into the significance of our country's largest Marine National Monument.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

We are proposing from one to three trips to the Monument during this period of time to complete this project. Each trip would last approximately one to four weeks. The timing of each trip may be dependent on the availability of flights to and from Midway Atoll and the timing of the Hi'ialakai NOAA vessel (or other support vessels) being in close proximity. For SCUBA operations based out of Midway Atoll, dives would likely take place over a 3-4 day period during that time in which the support vessel is in close proximity, with snorkeling excursions being performed as needed. GPS locations will be used to pinpoint areas previously surveyed and known to be home to the target fish and/or coral species. This information will help reduce the amount of exploratory diving

and sailing that would ordinarily need to be done, thereby maximizing the efficiency of the collection process and reducing the duration of the time needed within the Monument.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

The Waikiki Aquarium has been involved in many fish and coral collection activities over several decades, often as the lead organization. It is internationally renowned for its expertise and successes in collecting, maintaining, exhibiting, breeding and propagating many rare, new, and sometimes protected or endangered organisms. Education, research and conservation are the three activities underpinning the Aquarium's mission, and wherever we collect specimens, extreme care is taken to ensure that minimal, if any, environmental impact results from our collecting activities. This standard operating protocol is especially relevant in the pristine NWHI ecosystem.

Coral propagation is the forte of the Waikiki Aquarium, which has successfully maintained live corals since 1978. It now houses the largest and oldest collection of corals in the United States and is internationally renowned as a leader in this field. The objective of the Aquarium's Coral Farm program is to propagate corals to provide specimens to researchers and other public aquariums worldwide. Each year this program distributes approximately 1,000 fragments of coral. In this manner these organizations will not have to source corals from living reefs, thereby reducing collection pressures.

The Aquarium's newly established Coral Ark program seeks to propagate rare Hawaiian corals, with the ultimate objective of conserving them in captivity until they can be reintroduced into the wild. It is planned to expand this program to include all threatened or endangered Hawaiian corals, and also other rare Pacific corals. Notable species housed here currently include the rare endemic rice coral *Montipora dilatata*, collected in 2000 as fragments from the three known remaining colonies in Kaneohe Bay, and

fragments of *Acropora cytherea*, which were collected in 2007 off Kauai from the only known colony of this coral there. For both these species, propagation efforts on the fragments originally collected have been extremely successful: the original pieces have grown to the extent that they themselves have been subdivided into new fragments for propagation. The 20 live coral pieces received from the NWHI in October are also becoming established and are growing well. Lastly, it should be noted that corals in both these programs also represent a genetic depository that researchers can use, without affecting naturally occurring corals on reefs.

To this day, we maintain a prized collection of very rare Hawaiian marine organisms including, but not limited to: Hawaiian Monk Seals; the only known specimens of the Masked Angelfish *Genicanthus personatus* in public aquaria within the United States (we also have the only the only known record of breeding this species); several species of *Leptoseris*, the deepest known photosynthetic corals; and an extensive list of rare fishes and invertebrates which are not exhibited anywhere else.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct. The Waikiki Aquarium has several sources of finance to draw upon to adequately fund this activity; financial support from NOAA, NMFS, Friends of the Waikiki Aquarium (FOWA) will support this activity.

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

The Waikiki Aquarium has had years of experience working with and employing biologists who are extremely skilled in collecting a variety of organisms. This wealth of experience and expertise enables them to use non-lethal and non-destructive fishing practices which ensure that the animals collected are treated with the greatest care possible and that the environment they are removed from is not harmed in the process.

Whenever possible, shore-based dives/snorkeling will be used to prevent any additional disturbance that may be caused by a small boat/vessel. When shore-based dives and snorkeling are not an option, a small boat/vessel may be used. The impact on the natural resources of the Monument will be minimized by selecting specimens which are easily replenished or can regrow with a minimal amount of time and/or energy. Juvenile fishes will be collected when possible, thus preventing the taking of larger, sexually mature specimens, whose reproductive efforts serve to replenish populations.

Whenever possible, collected coral fragments will consist of naturally detached fragments. When naturally occurring fragments are not available, small fragments may be removed directly from parent colonies, and if/when this is done, it will be in a manner that will not affect the long-term growth of the coral. The success of this approach can be evaluated from the observation that the small scars left when fragments were removed from a parent colony as part of the 2009 project had completely healed over three weeks later. If coral fragments are taken directly from parent colonies, several different colonies may be used to prevent any one coral from becoming too stressed. Waikiki Aquarium biologists are highly experienced and competent in this technique. The minimum number of organisms needed will be removed through this activity, and those that are removed will be selectively chosen, thereby avoiding the unnecessary physical damage and death that often occurs to specimens that are captured incidentally as bycatch. While a small number of natural resources (i.e. fishes and corals) will be removed from the Monument, the effect will be short term only; the lasting effect of their removal will be invisible and the cultural, natural and historic resources, and ecological integrity of the Monument will remain intact.

i. Has your vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

NOAA vessels are equipped with the NOAA OLE Monitoring System

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.

There are no other factors that would make the issuance of a permit for the activity inappropriate.

8. Procedures/Methods:

Midway Atoll Collection Sites: Waikiki Aquarium/NOAA staff

Collection sites will be reached via SCUBA-assisted or snorkel-assisted shore dives or by use of small boat/vessel. Extreme care will be taken to ensure ecologically or culturally sensitive areas are not disturbed during our activities. To minimize the amount of exploratory diving within the Monument, previously visited dive/collection sites will be utilized. GPS locations have been previously recorded in areas known to contain certain desired specimens and will be used to locate some of these sites.

Non-destructive and non-lethal collection techniques with which Waikiki Aquarium staff are very well acquainted with will be used. Collecting tools including hand-nets, barrier nets, geological picks, small hand tools such as chisels and wire cutters, fish keeps, various small collecting containers, and mesh collection bags will be used for the collection of fish and corals. Fish may be placed in various keeps and will be gradually raised through the water column. Procedures with which Aquarium staff, Bishop Museum, and NOAA staff are experienced in will be used to acclimate fish from deeper locations to more shallow depths to prevent the onset of barotrauma. Fish may be fasted as they are collected in keeps or specialized containers suspended in the harbor at Midway Atoll or from an offshore float. This temporary fasting will facilitate the desired conditions for shipping and lessen the likelihood of water fouling in the bags during transit. If possible, fish and/or corals may be shipped via aircraft back to Honolulu. Fish will be packaged in individual bags about 1/3 full of seawater; several fragments of coral may be packaged together or individually based on fragment/colony size. Once placed in bags, all excess air will be removed from the bag and oxygen will be pumped into the bag until full. All fish will be double bagged and banded to prevent accidental puncture or collapse of the bag. Bags will then be placed into styrofoam boxes with plastic liners, and heat packs will be secured to the inside lids of the boxes

(if necessary) to maintain proper temperatures within the boxes. The styrofoam boxes will be placed within cardboard boxes, sealed, and be ready for transit.

If shipping via aircraft is possible, coral fragments collected from Midway Atoll will be placed either in keeps nearshore or in areas of reduced turbulence where they can be easily gathered for packaging and transit. The number of coral fragments per bag will depend on the size and quantity of the fragments. Plastic strips will be wrapped around the corals to provide cushioning from the vibrations of transit and to prevent individual fragments from contacting each other. In addition, plastic strips will line the insides of each bag to further prevent damage to individual fragments and also to prevent puncturing of the bags. Corals will be bagged according to genus/species, with different corals being packaged separately. Sufficient seawater will be placed in each bag to cover the corals, then the excess air will be removed and the bag refilled with oxygen until full. All corals will be double bagged and banded to prevent puncture or collapse of the bag. All bagged corals will be placed into styrofoam boxes with plastic liners, and heat packs will be secured to the inside lids of the boxes (if necessary) to maintain proper temperatures within the boxes. The styrofoam boxes will be placed within cardboard boxes, sealed, and be ready for transit.

Other islands/collection sites outside of the Midway Atoll waters: Various Collectors (TBD)

Collection divers from various agencies (including but not limited to FWS, NOAA, Bishop Museum) may be used to collect various fish/corals not found within the marine habitats surrounding Midway Atoll when Waikiki Aquarium staff are not present. Target species of coral include those which are rare or absent from the Main Hawaiian Islands, or those which cannot be visually identified and/or may represent new geographic records or new species. The priority should remain on collecting small (5-15 cm) naturally dislodged coral fragments of these corals. If fragments are to be taken

directly from parent colonies, these fragments should be removed in a manner which is least invasive and minimizes the long term affect on the coral's growth. Only corals exhibiting excellent health characteristics will be collected. Coral which appears to be unhealthy or diseased will not be collected. Coral fragments can be brought to the water surface via collection bags or specialized keeps where they will then be maintained aboard the Hi'ialakai or other support vessels (TBD). Coral fragments will be placed into specialized holding tanks or coolers aboard the vessel. Extreme care will be taken to follow the protocols established by the Monument concerning the discharge of water from these holding tanks/coolers. When possible, the total volume of water within these holding tanks/coolers should be exchanged a minimum of 2-4 times per day while within the Monument. Discharge water will drain into the ballast tanks (or other marine sanitation device) of the vessel during this time. Once outside the SPA's, an open, flow-through type circulation would be preferred (if possible). If Waikiki Aquarium staff or their designee(s), are present at Midway Atoll around the same time that the Hi'ialakai will be in the vicinity, it would be ideal for them to receive any fish/corals collected at the beginning of the trip which were being maintained aboard the vessel so these could be shipped via air transit back to the Waikiki Aquarium. These fish/corals would be prepared for shipping as described above. This would allow for room for additional fish/corals to be collected on the return trip (if needed) and these specimens could be transported via ship under the protocols of water exchanges described above.

Fish/corals will not be disposed of once collected and placed into holding aboard the vessel(s). Any fish/corals that become diseased during transit, or which die, will be retained and properly quarantined/preserved as stated by guidelines set forth by the Monument. The Waikiki Aquarium staff is continuing to work with Monument officials to ensure all fish and coral collection/transportation guidelines are met and followed.

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a

customized application will be needed. For more information, contact the Monument office on the first page of this application.

9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):
See attached "species collection list"

Common name:

Scientific name:

& size of specimens:

Collection location:

☐ Whole Organism ☐ Partial Organism

9b. What will be done with the specimens after the project has ended?

The intent of this project is to bring the specimens collected back to the Waikiki Aquarium, University of Hawaii at Manoa, where they will be placed in dedicated quarantine systems and eventually on display. Once through the quarantine process and treated successfully for any diseases or ailments they might have, they will be placed in the new 5,000 gallon NWHI educational display, and other associated propagation systems at the Aquarium.

9c. Will the organisms be kept alive after collection? ☒ Yes ☐ No

• Specific site/location:

Gallery 4-1/ Northwestern Hawaiian Islands Exhibit-Waikiki Aquarium

• Is it an open or closed system? ☐ Open ☒ Closed

• Is there an outfall? ☒ Yes ☐ No

The outfall disposes of system water only during periodic scheduled water exchanges or flushing procedures. This discharge water enters a sanitary sewer line and does not flow untreated to the ocean.

• Will these organisms be housed with other organisms? If so, what are the other organisms?
Yes; See attached "exhibit species list"

• Will organisms be released?

No

10. If applicable, how will the collected samples be transported out of the Monument?

Fish and corals will be carefully boxed then transported by plane out of Midway Atoll when possible. In addition to these fish and corals, some specimens may be transported via vessel (ie. Hi'ialakai) back to Honolulu. (see 8.Procedures/Methods for further details)

11. Is your proposed activity based on a State Department of Education Standards Based Curriculum? If so, describe:

N/A

12. If applicable, describe how you are collaborating with others in any way to reduce duplicative activities in the Monument or elsewhere?

In addition to the organisms being collected for display at the Waikiki Aquarium, we will be working closely with NOAA staff in a collaborative effort to collect organisms also for an educational display in the NOAA Mokupapapa Discovery Center in Hilo, HI. Waikiki Aquarium staff/designees and NOAA staff will partner up to assist each other in their collecting efforts; this will avoid replication and unnecessary additional disturbance at the collecting sites.

13. What materials, products or deliverables will be developed as a result of your proposed activity? Provide a time line for write-up and publication of information or production of educational materials:

The Waikiki Aquarium is world renowned for its ability to recreate ecologically accurate and realistic exhibits of marine habitats. For its 320,000 annual visitors, the experience of "seeing" a part of the Monument through the NWHI exhibit would do much more to interest and educate them than any book or video. Having live animals that most people will never get to see in their lifetimes in their naturalistic environment, separated from them by only a thin sheet of acrylic, is guaranteed to grab guests' attention and stimulate their interest. This ecologically accurate exhibit and associated graphic and video educational messaging will result in increased public awareness of the Monument, and the public will develop an appreciation of the importance of the Papahānaumokuākea Marine National Monument and the need to preserve it for future generations. Additionally, our education programs, which reach over 32,000 schoolchildren annually, will be revised to incorporate accurate scientific and cultural information about the Monument, using the exhibit as a dynamic living tool to underline the education and conservation message. Lastly, interactive touchscreens associated with the exhibit will enhance this appreciation by providing information on the cultural importance of the islands, their natural resources and their ecology, and provide visitors an insight into the significance our country's largest Marine National Monument. The proposed opening of this exhibit is early 2011.

14. List all specialized gear and materials to be used in this activity:

Collecting gear would include, but not be exclusive to, SCUBA gear, monofilament handnets, monofilament barrier fence nets, mesh bags, hypodermic needles used for prevention of barotrauma in collected fish, various sized holding containers for fishes and coral, geological picks, and various hand held tools. Holding tanks may consist of collapsible "kiddie" pools modified to our uses, coolers, various water pumps and air pumps that may be portable or "fixed". Other specialized gear would be shipping materials to transport the organisms. These would be plastic bags of various sizes, insulated boxes consisting of styrofoam and cardboard, rubberbands, packing tape, and oxygen bottle(s).

15. List all Hazardous Materials you propose to take to and use within the Monument:
N/A

16. Describe any fixed installations and instrumentation proposed to be set in the Monument:
N/A

17. List all Applicants' publications/references directly related to the proposed project:
Press release: http://papahanaumokuakea.gov/PDFs/nr_coral_arrival_final.pdf
Television newscast/web article: <http://www.hawaiinewsnow.com/Global/story.asp?S=11401255>
Magazine article: <http://www.honolulumagazine.com/Honolulu-Magazine/January-2010/The-Waikiki-Aquarium-039s-Coral-Collection/>

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as "confidential" prior to posting the application.

Signature

Date

**SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE
BELOW:**

Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
FAX: (808) 397-2662

DID YOU INCLUDE THESE?

- ☒ Applicant CV/Resume/Biography
- ☒ Intended field Principal Investigator CV/Resume/Biography
- ☒ Electronic and Hard Copy of Application with Signature
- ☐ Statement of information you wish to be kept confidential
- ☐ Material Safety Data Sheets for Hazardous Materials

Species Collection List

9a. Collection of specimens:

- "Whole Organism" (in reference to corals) denotes coral specimen which has become naturally detached from parent colony
- "Partial Organism" (in reference to corals) denotes coral specimen which is fragmented from parent colony

Common name: Table Coral

Scientific name: *Acropora cytherea*

& size of specimens: 10: 5-15cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Fuzzy Table Coral

Scientific name: *Acropora paniculata*

& size of specimens: 10: 5-15cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Finger Staghorn Coral

Scientific name: *Acropora humilis*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Bushy Staghorn Coral

Scientific name: *Acropora valida*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Branching Staghorn Coral

Scientific name: *Acropora nasuta*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Lumpy Rice Coral

Scientific name: *Montipora turgescens*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Hawaiian Rice Coral

Scientific name: *Montipora dilatata*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Unknown coral species

Scientific name:

& size of specimens: Maximum of 5 voucher specimens of each individual coral that cannot be visually identified and/or may represent new geographic records or new species: various sizes ranging up to 15cm

Collection location: various marine habitat from intertidal to <50m

 X Whole Organism X Partial Organism

Common name: Masked Angelfish
Scientific name: *Genicanthus personatus*
& size of specimens: 9: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Japanese Angelfish
Scientific name: *Centropyge interrupta*
& size of specimens: 9: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Hawaiian Morwong
Scientific name: *Goniistius vittatus*
& size of specimens: 4: juvenile to 20cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Bandit Angelfish
Scientific name: *Apolemichthys arcuatus*
& size of specimens: 8: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Sling Jaw Wrasse
Scientific name: *Epibulus insidiator*
& size of specimens: 4: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Thompson's Anthias
Scientific name: *Pseudanthias thompsoni*
& size of specimens: 20: juvenile to 10cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Elegant Anthias
Scientific name: *Caprodon unicolor*
& size of specimens: 10: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Common name: Bearded Armorhead
Scientific name: *Evistias acutirostris*
& size of specimens: 4: juvenile to 20cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X Whole Organism Partial Organism

Coral Handling Protocol

- Underwater collection/handling
 - Small branches/fragments (5-15 cm/2-6 inches) of coral should be removed/fragmented from the main colony in the least invasive manner possible (in cases where fragments of “table acropora” are desired, the easiest and least invasive fragments can be made by removing the newest/smallest level/tier from the top of the colony. The colony will quickly heal and regrow this area faster than fragments taken from lower on the colony or from an outer edge).
 - If healthy, recently naturally created fragments are present around the main colony, these can be collected instead of actually removing the pieces manually
 - Fragments should be placed into containers (ziplock, whirl-packs, or other plastic bags/containers) in a manner where they won't come in direct contact with one another. One fragment per bag would be the most ideal scenario.
 - Plastic bags/containers containing the coral fragments can then be placed into larger mesh collection bags or other appropriate container(s).
- Handling upon reaching vessel
 - Coral fragments can be kept temporarily (try to keep time down to about 30 minutes) in the bags they were collected in, and placed into a bucket containing fresh seawater.
 - As soon as possible, remove coral fragments from their bags, and place corals on the bottom of the bucket (it would be best to dump the water from the bags as it will probably have lots of mucous from the corals in them). Make sure the corals are not touching one another.
 - Add the airpump with airstones to the bucket. This will create quite a bit of turbulence, and should make the corals mucous even more. Allow the corals to sit in this bucket for about 5-10 minutes, then pick up each coral and rinse it thoroughly by plunging them one by one in and out of the water in the bucket to loosen up or remove the mucous, then place them back on the bottom of the bucket. After you have repeated this with all the coral fragments, dump the water, and refill the bucket one more time with fresh seawater.
 - Monitor the corals in the bucket, with the airpump and airstones still on, for an additional 5-10 minutes. They will be mucousing, but should not be mucousing quite as much as the first time. Thoroughly rinse the corals as described above, and begin to place them into the cooler(s).
 - PVC pipes are already inside the coolers. If only one cooler is being used, feel free to use pipes from the other cooler if you need more. Fishing line can be found in one of the boxed styrofoam coolers. Tie one end around the coral (does not need to be tight, just tight enough so the coral doesn't fall out), and the other end around the pipe. You can suspend the corals at different heights in the water column to help prevent coral fragments from banging into each other if there is a

lot of movement on the ship. Three to four fragments can be hung safely from each pipe.

- Obviously during the tying process, the corals will be exposed to the air. This is fine, just try to limit the total time they are exposed to no more than 2 to 3 minutes. They can handle more than this, but this is a conservative timeframe.
- The corals will most likely mucous again upon being placed into the cooler after being suspended by the fishing line and PVC pipes. Once all the corals are in the cooler, you can use the 2L plastic beaker to “skim” the surface of the cooler and remove any large accumulations of mucous and/or use the airline tubing provided to siphon expelled mucous from the corals.
- The filtration system should be able to remove most of the mucous, and even the stuff that is not skimmed off the surface will eventually break down and be removed by the PolyFilter Canister and/or Protein Skimmer.

- Daily Water Changes

- Experience has shown us that the corals mucous quite heavily for the first few days after collection. Hopefully the described rinsing process will help reduce the likelihood for numerous water changes, but careful monitoring will still be needed just in case more water exchanges are needed. I would expect 2-4 complete water changes MAY need to be done per day for the first few days.
- When performing “complete” water changes, you actually are only removing 80-90% of the water. Either lower the pvc pipes so that the corals are resting on the bottom of the cooler(s), or remove the pipes completely during this process, whichever is easier for you. When performing partial water changes (once you have determined the water is not becoming fouled and the corals have stabilized), you will be changing approximately 50% of the water in the same manner as listed below. The only difference is you may not need to turn off the powerstrip or unplug anything as long as the pumps don’t start “sucking air”.
- Turn off the powerstrip (or unplug the pumps and chillers). Drain the water by hose or bucket into the Marine Sanitation System/ballast tank (under NO circumstances should the water flow overboard), so the water level just barely covers the coral fragments.
- Make sure to run the new seawater for a few minutes so that all the “hot” water is flushed out of the pipes before filling the cooler. The new seawater can be flushed overboard (as far as I know...you should probably check with the Chief Scientist just to make sure there is no problem with this) until it runs cool. Fill the cooler to the midway point (the point where you will see the inside of the cooler gets a little wider) being careful not to spray the corals directly. This is approximately 20 gallons.
- Once filled to this point, return the corals to their suspended position, and turn the powerstrip back on (or plug the pumps/chillers back in).

- IF...for some reason this pump fails...then this is why we created the backup system. If you are not able to get the pump running, set the backup system up with seawater, and simply move the corals into that system. Notify me as soon as possible (whenever you have email access), just so I can make note and talk you through some other things to try to get the primary system back up and running.
- Cleaning filters
 - The protein skimmer collection cups probably will not need to be cleaned for several days...maybe even weeks into the trip. If they DO start collecting heavy amounts of foam, the drainage hoses can be placed into a bucket. Make sure the end of the hose does not become submerged in waste water/skimmate, or else the skimmer will not work efficiently. A daily cleaning of the riser tube and cup should be done just by rinsing the cup out and giving it a quick wipe down with paper towel, and the riser tube can simply be wiped with a paper towel. You should not need to turn the skimmer or pumps off during this process.
 - The canister filters are set up in a way that will also allow the pumps to remain running while you clean/replace the PolyFilter inside. Simply rotate the black part of the canister filter so that the arrows align with the “bypass” mark. I would highly recommend placing the 2L plastic beaker under the canister at this point. VERY SLOWLY unscrew the collar of the canister...water WILL begin to drip out. Careful attention should be paid to make sure that 1) the water does not drip outside of the beaker and overboard and 2) does not drip all over the chiller. The chillers are not the most water resistant chillers I have ever seen, and this will greatly reduce the chances of them shorting out. I have covered the most sensitive parts of the chillers with electrical tape to further reduce the chances of water getting into them and shorting them out, but please be careful anyways. Dump the water from inside the canister into the Marine Sanitation System/Ballast tank, discard the old PolyFilter (when DARK brown or black), and replace with new PolyFilter. There is no need to rinse these before putting them in. Screw the canister back on. Slowly turn the black part of the canister filter until its arrows align with “filter” and check for leaks. Finally check the water level inside the cooler(s) to make sure none of the corals are exposed and top off if needed with seawater (remembering to purge the lines of the hot water first).
- Water levels/flow rates
 - Water level in the cooler(s) should be just to the top of the “narrower” section. If the secondary cooler needs to be used, you may want to fill this cooler just an inch or two lower than this level so the chiller can keep up better. It is a chiller rated for 24 gallons, but may still struggle if filled all the way.

- Water level in the protein skimmers should be just about even with the top of the black acrylic box. Don't mistake the water level for the foam level, which SHOULD be filling the riser tube once the system breaks in and it starts breaking down the biological compounds released by the corals. This may take a week or more...so don't worry if they don't seem to be working...just give them time! The PolyFilter may be removing so much waste that the skimmers just don't have much to pull out.
- All of the ball valves should have a permanent marker line drawn on them to show how much they should be opened/closed. With all the motion on the ship, putting the grill covers on/off, etc, these may get bumped or moved from time to time. Please check them periodically to make sure they are in the proper placement.
- Lids opened/closed
 - While stationary (if seas are not too rough), please try to open the lids on the coolers so the corals can get **some indirect sunlight** (too much sunlight can actually bleach the corals since there is very little water to reduce the intensity). This can be done by turning off the powerstrips (or by simply closing the ball valve feeding water to the protein skimmers). Loosen the union, and wiggle the PVC pipe free from the bulkhead in the lid (these are just dry fit in place and not glued in). Open the lid, flip the PVC pipe over so the long end is pointing down, reattach the union, and turn the pump/ball valve back on so the skimmer starts working again.
 - While the ship is in motion/transit, please close the lids by doing just the opposite of the directions above.

Coral Packing Protocol

Items included:

- (4) Styrofoam coolers (17x11x11") with cardboard box exterior
- Various sized plastic packing bags (double bagged with newspaper separators)
- Gray bag cooler liners
- Rubber Bands
- 2L Plastic container
- Side cutter tool
- Permanent Marker
- Packing Tape
- Cut plastic strips
- Newspaper

Transport from Vessel to Midway (ONLY if packing is not able to be done on the Hi'ialakai)...

- Corals will be in (2) two ~40 gallon white cooler(s) aboard the Hi'ialakai NOAA Vessel.
- Cooler(s) should be secured to avoid any possibility of contamination of water from cooler(s) into Monument/Midway water.
 - Lids securely fastened (taped shut if necessary)
 - Drains plugged
- Cooler(s) will then be placed aboard small boat and transported to Midway Atoll or directly offloaded onto Midway Atoll via the Hi'ialakai (if this option is available).
- Upon arrival at Midway Atoll, the cooler(s) will be setup as they were aboard the Hi'ialakai (air pump(s) and/or powerhead(s) turned back on).
 - A water change should be performed upon arrival at Midway (Depending on quality of corals/water upon arrival a 50% water change may be needed...larger % may be needed depending on quality of corals and water quality w/in cooler)
 - Several more water changes per day will likely need to be performed up to the time of packing/transport via airplane. These water changes should be of amounts equaling 50-100%
 - Waste water should be disposed of into sanitary sewage system or poured onto ground, away from possible entry sites into Monument/Midway waters, where it can be dessicated/dried out completely

Packing Instructions...

- Perform another water change just prior to packing (25-100% depending on the quality of the corals and water)
- Inspect corals for signs of damage/disease
 - Remove any crushed/damaged/diseased areas of coral using side cutters, and place into Styrofoam cooler labeled "Waikiki Aquarium-Non-live specimens only"
- Have (2) two five-gallon buckets with fresh seawater available. This will be the water you will be using to fill the bags (unless there is a hose or other source of fresh seawater available).

- Shake the coral in the water within the cooler for approximately 30 seconds. If running seawater is available (must drain into the Marine Sanitation Device or other Sanitary Sewer System), rinse the corals thoroughly in the running water. Remove the coral from the cooler and let it sit out exposed to the air for approximately 30 more seconds.
 - Place the coral back into the cooler (or bucket with running seawater) and repeat this process with ALL the pieces of coral. Let the corals remain in the cooler for at least 5 minutes. This should make the corals start to mucous pretty heavily.
 - The corals are now ready to be bagged
- Bags are already made up (double bagged w/newspaper between the two). Add a significant amount of plastic strips to the bag (more than we used during the test run).
- Add approximately 1L of seawater to the bag with the strips in it. Try to submerge the strips as well as possible.
- Before removing the coral to place into the bag, shake the coral rigorously to remove the additional mucous that has formed (or rinse it with running seawater if available). This can be done by repeatedly plunging the coral in and out of the water and shaking along the waterline.
- Place the coral into the bag, on top of the plastic strips.
 - There is no need to wrap the corals in plastic strips.
- Check the water level within the bag, make sure that the coral is just covered with water. You may need to add more water depending on the size colony/fragments
- Add more plastic strips along the sides of the coral to prevent possible puncturing of the bag (no need to cover the top of the coral, just the sides)
 - Small branches (less than or equal to 1") of coral can either be wrapped individually or placed directly into the plastic strips within the bag, and up to (4) four branches of this size may be placed in each bag
- Depress the bags until all the remaining air has been removed
- Using airline from the Oxygen bottle, gently fill the bag until full with O₂.
- Using at least (2) two rubber bands, seal the bag
 - Twist the bag as much as possible; form a noose or slip-knot with the bands around this twisted portion of the bag; fold the twisted portion over; twist again if possible; then wrap the entire band around the bag 3-5 times (or until tight), then wrap half of the band around this part of the bag 2-3 times (or until tight).
- Place bag upright into box
- Label the outside of the bag (Acropora sp.... x1,2,3...this is the number of frags/colonies in the bag) (if you know the species, you can write it)...repeat this for each bag
- Also place this same label on the outside lid of the box...repeat this for each bag
- If box(es) are not full, pack any gaps between bags with crumpled newspaper
- Tie/Tape/Rubberband the larger gray box liner bag closed
- Tape Styrofoam coolers shut by sealing all the way around the lip of the coolers/lids
- Enclose permit on top of cooler lid
- Seal Cardboard Box shut with packing tape (make sure packing label is visible, species and number of specimens that you wrote on the box lid is visible)

Non-live specimens...

- Any non-live specimens shall be stored on ice in cooler (if possible) or in freezer (if possible) until the time of shipping.
- All non-live specimens shall be double-bagged (without water) and labeled “non-live Acropora sp”
- All non-live specimens shall be placed into Styrofoam cooler with gray interior bag liner (additional bag included in one of the boxes) on ice or with freezer packs.
- Gray bag liner should be sealed (ie, taped/tied/banded)
- Styrofoam cooler should be sealed (taped around entire lip of lid)
- Exterior of box should be labeled “Waikiki Aquarium-Non-live specimens only”...this should already be done
- Box should be sealed with packing tape.

When finished...

- Excess water, tools, containers should be sterilized using a 10% bleach mixture for a minimum of 10 minutes, and neutralized to prevent the possible spread of organisms not native to Midway Atoll.
- Any items not needed aboard the aircraft (ie pumps, hoses, egg crating, collecting/fragmenting tools, packing items, 40 gal coolers, etc) can be returned to vessel Hi'ialakai for transport back to Oahu.
- Excess water should be disposed of into the sanitation system or disposed of onto dry land for complete desiccation, away from the entry points to nearby waterways.

Fish Collection/Maintenance Protocol

Collection and Decompression Methods:

- Collection sites will be reached via SCUBA-assisted or snorkel-assisted shore dives or by use of small boat/vessel
 - To help minimize the amount of exploratory diving within the Monument, previously visited dive/collection sites may be utilized
 - GPS locations have been previously recorded in areas known to contain certain desired specimens and will be used to locate some of these sites
- Non-destructive and non-lethal collection techniques with which Waikiki Aquarium staff (and their designees) are very well acquainted with will be used
 - Collecting tools including hand-nets, barrier nets, small hand-lines, fish keeps, various small collecting containers, and mesh collection bags may be used for the collection of fish
- Procedures with which Aquarium staff, Bishop Museum, and NOAA staff are well experienced in will be used to acclimate fish from deeper locations to more shallow depths to prevent the onset of barotrauma
 - Signs of barotrauma from least to most severe include: loss of controlled buoyancy, listing to one side or another, inverted positioning or inability to right itself, eyes or abdominal swelling/bulging, lethargy, and mortality
 - Fish collected from depths <60' rarely exhibit problems with ascent from depth, but will be observed during ascent to determine whether extended decompression periods (where time allows) or decompression of the swim bladder via hypodermic needle (aka "needling") is needed for the prevention of barotrauma
 - Fish collected from depths >60' may need extended decompression periods or decompression of the swim bladder via hypodermic needle to prevent barotrauma and allow for a safe ascent to the water's surface
- **Needling Techniques:**
 - Needling is used when time is not available bring the fish up gradually through the water column over several days to decompress the fish slowly
 - Two methods are commonly used by professional collectors
 - The first uses a small gauge hypodermic needle which is passed through a minimal amount of tissue at the cloaca and into the swim bladder of the fish. As the fish is brought up from depth, the expanded gas within the swim bladder is slowly expelled through the open end of the needle
 - The second also uses a small gauge hypodermic needle which is placed under a scale and between the ribs through the side of the fish. This method involves the needle passing through muscle tissue and into the swim bladder. The result of bringing the fish up from depth is the same.
 - It is not uncommon for some fish to need more than one needle during the ascent phase of the dive

- **Gradual Decompression Techniques:**

- Where time is available to slowly bring fish from depth to the surface, collected fish which have been placed in keeps can be tied off to a buoy line, and can be brought up gradually from depth
- This is a common practice for fish which are also too small to be needed
- Accepted protocol for fish collected at 200'
 - Bring fish to 100-110' and leave overnight
 - Next day bring fish up to 50-60' (or until fish begin getting "light")
 - Next day up to 0-20' (or until fish begin getting "light")
 - Next day to surface (if needed)
 - (3-4 days total)
- Accepted protocol for fish collected at 100-110'
 - Bring fish up to 50-60' (or until fish begin getting "light")
 - Next Day up to 0-20' (or until fish begin getting "light")
 - Next day to surface (if needed)
 - (2-3 days total)

Introduction and Maintenance of Fish in Holding System

- Upon return to the vessel, fish will be placed within clear, isolated keeps/containers, and placed within a large plastic drum liner filled with fresh seawater, and floated in the designated holding system where the chiller will be running and will control the temperature of the water within the bag
 - Furacin (or similar antibiotic) will be added to the seawater within the bag and the bag will be filled with pure oxygen and sealed. This acts as a non-pressurized decompression chamber of sorts and will minimize any residual effects of the decompression process as well as prevent the onset of any possible bacterial infections which may normally arise as a result of reduced immunities from stress or needling techniques
 - This method works well for very sensitive species, and is repeated following a complete water exchange 3-4 days later
 - Fish needing additional treatments will be treated on a case by case basis in the same manner as above (i.e. placed in isolated bags with O₂); all other fish will be placed into the holding system within their isolated keeps to rule out the possibility of inter/intra-species aggression, where each fish can be fed individually and carefully monitored.
 - Daily water quality assessments will be performed to test for pH, ammonia, nitrite
 - Water exchanges will be performed as needed if/when parameters vary significantly from seawater which is supplied from the vessel or from the harbor (i.e. pH +/- 1 from initial reading; ammonia levels >.2ppm; nitrite levels >.5ppm)
 - Water exchanges should be minimized by the filtration techniques used on the system

- Protein skimmer(s) and PolyFilter will both be in use to remove bio-fouling agents, and/or absorb ammonia/nitrites as well as other possible contaminants
- Leftover food items/matter will be removed manually by siphon, net, or other means twice daily to reduce the likelihood of increased bacterial formation and water fouling chemicals

Papahānaumokuākea Marine National Monument Compliance Information Sheet

1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant):

- Richard Klobuchar, Jr.-Aquarium Biologist/Scientific Diver/Fish and Invertebrate Collection, Waikiki Aquarium-University of Hawaii (Manoa)
- Richard L. Pyle, Ph.D- Associate Zoologist, Database Coordinator, Bishop Museum
- James E. Maragos, Ph.D-Coral Reef Biologist/Invertebrate Collection, U.S.Fish & Wildlife Service
- Daniel Wagner, HIMB MOA
- TBD (x3)- Aquarium Biologist/Scientific Diver/Fish and Invertebrate Collection, (including but not limited to FWS, NOAA, HIMB, WAQ, UH(Manoa))

2. Specific Site Location(s): (Attach copies of specific collection locations):

- Angelfishes & Morwong 40-80'
N 28° 11.521' W 177° 24.595'
- Genicanthus seen here and to the west 50'
N 28° 11.790' W 177° 22.106'
- Caprodon & Thompson's 110'
N 28° 11.541' W 177° 22.706'
-

3. Other permits (list and attach documentation of all other related Federal or State permits):

- Papahānaumokuākea Marine National Monument, Education Permit (Rossiter PMNM-2009-031...exp 12/31/09)
- State of Hawaii, Department of Land & Natural Resources, Division of Aquatic Resources, Special Activities Permit (2008-61; awaiting permit approval)
- State of Hawaii, Department of Agriculture, Import Permit-Conditional (11-02-O-A4115)
- State of Hawaii, Department of Agriculture, Import Permit-Restricted (11-02-O-A4116)

3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation.

N/A

4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information):

State/University of Hawaii (Manoa)

5. Time frame:

Activity start: July 1, 2010

Activity completion: December 31, 2010

Dates actively inside the Monument:

From/To: July 21, 2010-Aug 19, 2010 and/or Aug 27, 2010-Sept 30, 2010 (approximate dates)

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application:

Activities with which Waikiki Aquarium staff are participating are limited by the availability of lodging in the vicinity of our dive operations. The proposed collecting activities will utilize the support vessel Hi'ialakai for lodging, a dive platform/dive support, and emergency uses. If lodging becomes available at Midway, collection dives may take place there, but the majority of the dives are expected to take place using the Hi'ialakai as the main dive platform.

Personnel schedule in the Monument:

6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:

UH Scientific Dive Certified, Workers Compensation w/ University of Hawaii (Manoa)-First Insurance Company of Hawaii, Ltd.

7. Check the appropriate box to indicate how personnel will enter the Monument:

- ☒ Vessel
☒ Aircraft

Provide Vessel and Aircraft information:

NOAA Hi'ialakai Vessel

Maritime Air Charters - Plane # N8E (assuming this is the same plane as last year)

8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation):

- ☐ Rodent free, Date:
☐ Tender vessel, Date:
☐ Ballast water, Date:
☐ Gear/equipment, Date:
☐ Hull inspection, Date:

9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):

Vessel name:

Vessel owner:

Captain's name:

IMO#:

Vessel ID#:

Flag:

Vessel type:

Call sign:

Embarkation port:

Last port vessel will have been at prior to this embarkation:

Length:

Gross tonnage:

Total ballast water capacity volume (m3):

Total number of ballast water tanks on ship:

Total fuel capacity:

Total number of fuel tanks on ship:

Marine Sanitation Device:

Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:

Inmarsat ID#:

10. Tender information:

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:

Additional Information for Land Based Operations

11. Proposed movement of personnel, gear, materials, and, if applicable, samples:

Most gear will be transported via vessel (Hi'ialakai). Items which cannot be transported via air (ie. O2 bottles), will be transported via vessel (Hi'ialakai) to Midway Atoll, then unloaded onto a skiff and transported to land. Randall Kosaki is a certified small boat operator and will be assisting in field operations.

12. Room and board requirements on island:

Waikiki Aquarium staff (x2) and NOAA staff (x2) will be using US Fish and Wildlife Service and/or State of Hawaii supplied accommodations during the proposed activities at Midway Atoll. This may include up to three trips, each consisting of 7-10 days...As of 6/22/10, no lodging on Midway will be necessary. Lodging for Waikiki Aquarium staff (x1) will be aboard the Hi'ialakai.

13. Work space needs:

A covered/shaded area, with electricity, in the vicinity of ocean water would be requested if possible. Fresh, running seawater would be ideal for a flow-through system, but not necessary. Water could be returned back to the ocean, or disposed of into drains/sewage systems. If concerns arise over introduction of possible disease organisms or transfer of non-native organisms to Midway Atoll, water can be drained onto open, dry parcels of land/pavement/etc where desiccation can occur and any potential undesirable organisms will be destroyed.

Freshwater access will be necessary for rinsing dive gear, cameras, regulators, collecting tools, and will be hung to dry for the next day's use. Water will drain onto ground around rinsing stations. Electrical access for charging of cameras, GPS equipment, etc would be desired, and could be satisfied by the use of a couple wall plugs/outlets... As of 6/22/10, no work space will be necessary on Midway. Work space for Waikiki Aquarium collections will be maintained aboard the Hi'ialakai.

DID YOU INCLUDE THESE?

- ☒ Map(s) or GPS point(s) of Project Location(s), if applicable
- ☒ Funding Proposal(s)
- ☐ Funding and Award Documentation, if already received
- ☐ Documentation of Insurance, if already received
- ☐ Documentation of Inspections
- ☐ Documentation of all required Federal and State Permits or applications for permits